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In fact, the revision everywhere shows evidences of haste, and as the author signs his preface April 1905, just before he sailed for Europe on his way to South Africa, it seems likely that he was working under pressure that prevented—most unfortunately, indeed—that “careful revision” of which he speaks.

Spite of defects that, by a little more care, the author could easily have avoided, we welcome the new edition and commend it to every botanist as a necessary reference work, even though he have the first.—C. R. B. and C. J. C.

MINOR NOTICES.

IN AN ELEGANT work on the Bahama Islands,⁷ published by the Geographical Society of Baltimore, there is an interesting ecological presentation of the vegetation by W. C. COKER, the result of an expedition undertaken in the summer of 1903. The discussion of the plant formations follows accounts of previous botanical work in the Bahamas, the composition and relationships of the flora, and the economic plants. On New Providence Island the author found a sand strand formation made up of the following associations successively inward: *Ipomoea pescaprae* with *Paspalum* and *Sporobolus*, *Uniola* and *Tournefortia*, *Pithecolobium* and *Salmea*, *Erithalia* and *Reynosa*, and the silver palm. There are wet and dry pine barrens, the former with an undergrowth of *Inodes palmetto*, the latter with a *Coccothrinax*. Other formations are those of the salt marsh, the fresh marsh, the coppice, and the rocky shore. On Watlings Island *Suriana*, *Chrysobalanus*, and *Lantana* are prominent on the sand strand, and there are mangrove formations with *Conocarpus*. The paper closes with a list of the plants collected. There are plates of typical formations, and of some economic plants, and there is a colored plate of *Bougainvillea*.—H. C. COWLES.

A POPULAR account of all the pteridophytes except the homosporous Filicales, with special attention to ranges, habitat, time of fruiting, manner of growth, folk lore, etc., is given by CLUTE in a new book entitled *The fern allies of North America*.⁸ The field notes, which show an intimate acquaintance with the life histories of the various forms, will interest the botanist as well as the layman. The seven keys, by which the genera and species may be identified are as untechnical as an efficient key can be made. Necessary technical terms are defined in a glossary. Both common names and scientific names are given. No attempt is made to treat internal anatomy or morphology.

The illustrations, more than 150 in number, are by IDA MARTIN CLUTE. Details which are of taxonomic importance have been drawn with particular accuracy, so that many of the species might be identified by the illustrations alone.—CHARLES J. CHAMBERLAIN.

⁷ COKER, W. C., Vegetation of the Bahama Islands. The Bahama Islands. pp. 185–270. New York. 1905.

⁸ CLUTE, W. N., The fern allies of North America north of Mexico. 8vo. pp. xiv + 278. New York: Frederick A. Stokes. 1905. \$2.00 net.

BELIEVING that insufficient attention has been given to the higher fungi as a cause of disease in animals, GUÉGUEN⁹ has compiled a volume containing descriptions of all fungi which have been reported parasitic on man and other animals. The material, including the Myxomycetes, is arranged in the following order: Myxomycetes, Oomycetes, Basidiomycetes, Ascomycetes, and Fungi Imperfecti. To the description of each species are added notes on the pathology of the organism so far as known. All fungi that have been reported on animals, even the lowest, are included. Full references to literature are given at the end of each chapter. The volume as a whole will be of greater interest to pathologists than to botanists.—H. HASSELBRING.

HALLIER¹⁰ has published a résumé of the more important features of his natural system of classification¹¹ with some corrections and additions, which are here noted. The Hydnoraceae and Balanophoraceae are held to be derived through parasitism from epiphytic Cactaceae; the Gnetaceae do not belong to the gymnosperms, but are reduction forms near the Loranthaceae, Myzodendraceae and Santalaceae; and Casuarina is nearly related to Betula and Alnus.—C. J. CHAMBERLAIN.

NOTES FOR STUDENTS.

IN A NOTE in the Comptes Rendus,¹² RÉNÉ MAIRE summarized the results of his cytological study of the mitosis in the ascus of *Galactinia succosa*, describing the existence of "protochromosomes," or chromatic granules formed during the prophase of the first division, and which united during the metaphase into the four chromosomes of the equatorial plate. In a more recent publication,¹³ based upon a more detailed study of *Galactinia* as well as several other Ascomycetes, MAIRE has endeavored to explain the significance of the protochromosomes and to recognize certain specific characters of the first division in the ascus. He believes this division to be heterotypic, comparable to the heterotypic division of higher plants. The secondary nucleus of the ascus at the time of its greatest size shows long, fine, much intermixed chromatic filaments, which have been furnished to it by the two primary nuclei. Later these chromatic filaments approach and fuse two and two. It has been impossible to determine whether or not this bivalence is a result of a folding of a single thread or of the union of two different filaments. At this time the filaments are collected to one side of the nucleus into a compact synaptic ball, which later undergoes complete dissolution into chromatic granules or protochromosomes. At the time the centrosomes and the

⁹ GUÉGUEN, F., Les champignons parasites de l'homme et des animaux. 8vo. pp. 299. pls. 10. Paris: A. Joanin & Cie. 1904. 20fr.

¹⁰ HALLIER, H., Neue Schlaglichter auf das natürliche System der Dikotyledonen. Phylogenetische Betrachtungen. Imp. 8vo. pp. 15.

¹¹ BOT. GAZETTE 35:223. 1903.

¹² Compt. Rend. Acad. Sci. Paris 137:769. 1903.

¹³ MAIRE, RÉNÉ, Recherches cytologiques sur quelques Ascomycètes. Ann. Mycol. 3:123-154. pls. 3-5. 1905.